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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,549	07/01/2004	Yanmeng Sun	CA 020004	5112

24737 7590 04/06/2007

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER	
NGUYEN, LEON VIET Q	
ART UNIT	PAPER NUMBER
2611	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/500,549	SUN, YANMENG	
	Examiner	Art Unit	
	Leon-Viet Q. Nguyen	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 January 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. This office action is in response to communication filed on 2/9/07. Claims 14 - 20 have been added. Claims 1 - 20 are pending on this application.

2. Applicant's amendment overcomes the following objection/rejection:

a. Objection to the drawings

b. Objection to the Specification

c. Rejection of claim 12 under 35 USC 101

2. Applicant's arguments with respect to claim 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US20010021199) and further in view of Arima (US20010019578).

Re claim 1, Lee teaches a correlation system for correlating an input signal with a number of code signals each having a code length (¶0009, ¶0015, correlating the synchronous channel with available secondary synchronization codes with each code composed of 256 chips) comprising:

a plurality of correlators (correlators 500, 510, and 520 in fig. 5, ¶0036); and

a controller for controlling said correlation system (¶0009, the SCH is a control channel) for performing iterative correlations and for adapting at least one correlation parameter per iterative correlation (¶0016), a first one of the at least one correlation parameter being a length of code signals (¶0036, the SCH of a 256-chip length is correlated with the complex conjugate of the PSC), said controller controlling said correlators (¶0036, the correlation units divide the SCH with respect to the output SCH of the ADC) such that first correlations are performed by all of said correlators (¶0036, each of the partial correlation units partially correlates the complex conjugate of the PSC with M blocks of the SCH) using the same code signals each having a first length smaller than said code length (¶0036, since the 256-chip length is divided it is obvious to one of ordinary skill in the art that lengths would be smaller than the original code length).

However Lee fails to teach wherein second correlations are performed by only a portion of said correlators selected based on results of the first correlations and using the same code signals each having a second length larger than said first length and smaller than or equal to said code length. Arima teaches performing short integration on all correlators (¶0044, correlators 104-1 to 104-5 perform short integration) and then

performs a long integration on a portion of the correlators (¶0049. Correlators 104-1, 104-2, and 104-4 perform long integration). The long integration has a long length and the short integration has a short length (¶0005). One of ordinary skill in the art would realize that the second length would be longer that the first length.

Therefore taking the combined teachings of Lee and Arima as a whole, it would have been obvious to one of ordinary skill in art at the time the invention was made to incorporate the correlators of Arima into the correlation system of Lee. The motivation to combine Lee and Arima would be to fast perform finger assignment in data demodulation (¶0051).

Re claim 2, the modified invention of Lee teaches a correlation system wherein the second length is smaller than said code length (¶0036 in Lee, since the 256-chip length is divided it is obvious to one of ordinary skill in the art that lengths would be smaller than the original code length), said controller controlling said correlators such that third correlations (¶0049 in Arima, the third correlation is the short integration performed by correlators 104-3 and 104-5) are performed using the same code signals each having a third length larger than said second length and smaller than or equal to said code length (¶0033-¶0034 in Arima, although not explicitly stated, one of ordinary skill in the art would have found it obvious to use a short integration for the second correlation to reduce a search time and a long integration for the third correlation to obtain the accuracy for performing cell determination), said third correlations beinq performed by fewer correlators than used to perform said second correlations (¶0049 in

Arima. The second correlation is the long integration is performed by correlators 104-1, 104-2 and 104-4. The third correlation is the short integration performed by correlators 104-3 and 104-5).

Re claim 3, the modified invention of Lee fails to teach a correlation system, wherein a second correlation parameter corresponds with the number of code, with first the correlations using a first number of code signals, and with the second and any subsequent correlations using a second number of code signals smaller than said first number of code signals. However Lee teaches, in the background of the invention, wherein a second correlation parameter corresponds with the number of code signals (¶0007 in Lee, the scrambling codes to be searched), with first the correlations using a first number of code signals (¶0007 in Lee, sixty four code groups and eight scrambling codes per group), and with the second and any subsequent correlations using a second number of code signals smaller than said first number of codè signals (¶0007 in Lee, once a code group is detected the number of scrambling codes to be searched is decreased to 8).

Therefore taking the teaching from the background of Lee with the combined teachings of Lee and Arima as a whole, it would have been obvious to one of ordinary skill in art at the time the invention was made to incorporate the searching method from the background of Lee into the correlation system of Lee and Arima. The motivation to combine Lee, Arima, and the background of Lee would be overcome the problem of extensive time and processing used during cell searching (¶0007 in Lee).

Re claim 4, the modified invention of Lee teaches a correlation system, wherein said controller is coupled to a comparator for comparing correlation results for adapting said at least one correlation parameter in dependence of comparison results (¶0027 in Lee, code group identifier 263 correlates a signal with 16 SSCs and combines the correlation results for every frame).

Re claim 5, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 3. Claim 3 recites using a smaller number of code signals with next correlations. It would have been obvious and necessitated to have an apparatus to select a smaller number of code signals.

Re claims 6, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 1. Furthermore, the modified invention of Lee teaches a DC/CDMA receiver (¶0014 in Lee). It is well known in the art that CDMA signals are transmitted across radio waves.

Re claim 7, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 2.

Re claim 8, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 3.

Re claim 9, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claims 4. Furthermore, the modified invention of Lee teaches identifying a code group based on the correlation between the SSC and a received signal, and then allocating a scrambling code to each detected cell after the code group is identified (¶0010 in Lee), which is interpreted to be the same as finding a cell through identification of at least one code signal.

Re claim 10, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 5.

Re claim 11, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 1. It would be necessary to have a method of using the correlation system as claimed.

Re claim 12, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 1. It would be necessary to have program for executing the method of using the correlation system as claimed.

Re claim 13, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 6. It would be necessary to have a method of using the mobile terminal as claimed.

Re claim 14, the modified invention of Lee teaches a correlation system wherein the code signals having the first length (¶0036 in Lee, the first length being a divided portion of the SCH) are an initial portion of the code signals (¶0036 in Lee, the initial code signal is 256-chip length and the first signal is a divided portion of the initial code signal).

Re claim 15, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 14.

Re claim 16, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 15.

Re claim 17, the modified invention of teaches a method further comprising:

determining which of the correlators provide the best correlation results from the first correlations (¶0033 in Arima. The control section section 105 selects a correlation value exceeding a threshold in descending order of correlation value after the short integration. The value exceeding a threshold is interpreted to be the best result.); and

using those correlators determined to provide the best results from the first correlations as the portion of correlators used for the second correlations (¶0033 in Arima. The control section 105 assigns the correlator(s) corresponding to the best correlation results to perform the correlation process).

Re claim 18, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 2. The additional correlation in claim 18 is interpreted to be the same as the third correlation as in claim 2.

Re claim 20, one of ordinary skill in the art would have found it obvious and necessary to vary the second length based on the correlation results from the first correlation to ensure that the second correlation uses code signals each having lengths at least larger than the first lengths.

5. Claim 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US20010021199) and Arima (US20010019578) and further in view of Aslanis et al (US5627863).

Re claim 19, the modified invention of Lee fails to teach a method further comprising:

identifying a single correlator which provides the best correlation result after performing the first and second correlations; and

analyzing the correlation result relative to a threshold .

However Aslanis teaches determining a best correlation result from 64 correlation results (col. 9 lines 31-35). Since there is one correlator (correlator 60 in fig. 1, col. 9 lines 31-32), it is interpreted that the single correlator provides the best correlation result. Furthermore Aslanis teaches determining whether the best correlation result exceeds a threshold (col. 9 lines 33-36).

Therefore taking the modified teachings of Lee and Arima with Aslanis as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the method of determining the best correlation result of Aslanis into the method of Lee and Arima. The motivation to combine Lee, Arima, and Aslanis would be to substantially avoid false resynchronization results (col. 9 lines 36-40).

Response to Remarks

Applicant asserts that Lee et al fails to teach providing only a portion of a code signal to all of the correlators and then directing a larger portion of the code signal to a subset of the correlators selected based on the results of the preceding correlation.

Examiner agrees. However, in light of Arima, argument is moot. Arima teaches detecting correlation values over a short and long integration length (¶0005 in Arima). It is interpreted that a long integration length is a larger portion of a code signal. Therefore the short integration length must be only a portion of the code signal. Also, the long integration length is performed with three out of the five correlators (¶0049), with the three correlators being selected by a search control section that receives correlation values from all five correlators after short integration is performed (¶0044-¶0045). The short integration is performed before the long integration.

Applicant also asserts that Arima teaches wherein different code signals are provided to the correlators, i.e., different portions of the code signals are provided to each correlator for the purpose of determining which portions are best processed by

each correlator and that there is no performing of the correlation process wherein the number of correlators is reduced from one set of correlations to the next while the length of identical code signals being processed by the correlators in each set of correlations is increased.

Examiner respectfully disagrees.

Arima teaches that each correlator performs long and short integration in an assigned search window (¶0007). It is interpreted that the code signal corresponding to the single search window is the same for both integrations, therefore the code signals would be the same for all correlators in the first and second correlation. Arima also teaches performing long integration with three out of five correlators (¶0049). Since the first, short integration is performed with all five correlators (¶0044), it is obvious that the number of correlators is reduced. Furthermore, the long integration length is interpreted to be larger than the short integration length and thus would be increased while still using the same code signal. And because the long integration is performed after the short integration (¶0044-¶0049), it is interpreted to be iterative.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leon-Viet Q. Nguyen whose telephone number is 571-270-1185. The examiner can normally be reached on monday-friday, alternate friday off, 7:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Leon-Viet Nguyen/

David C. Payne

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